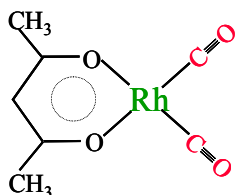


Multi-dimensional Ultrafast Infrared Vibrational Echo Spectroscopy

Moving Vibrational Spectroscopy Along the NMR Road

Rh(CO)₂acac
in glassy solution



Features in 2D Vibrational Echo Spectrum

High frequency oscillations – quantum beats, line splittings

Low frequency oscillations – vibrational anharmonicity

1-2 vibrational transition peaks

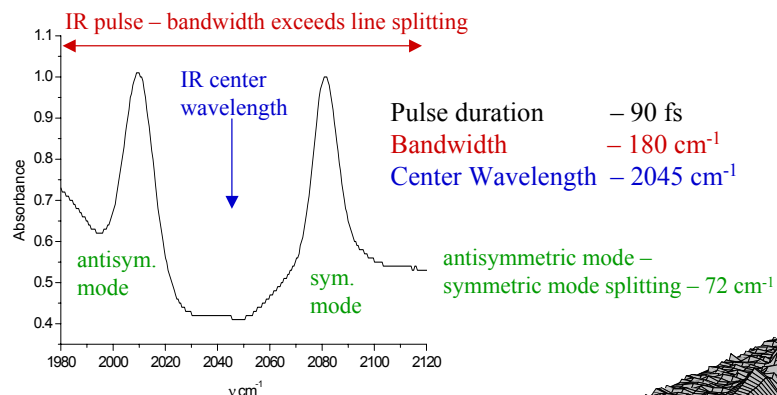
Combination band peaks

Dynamic dephasing times

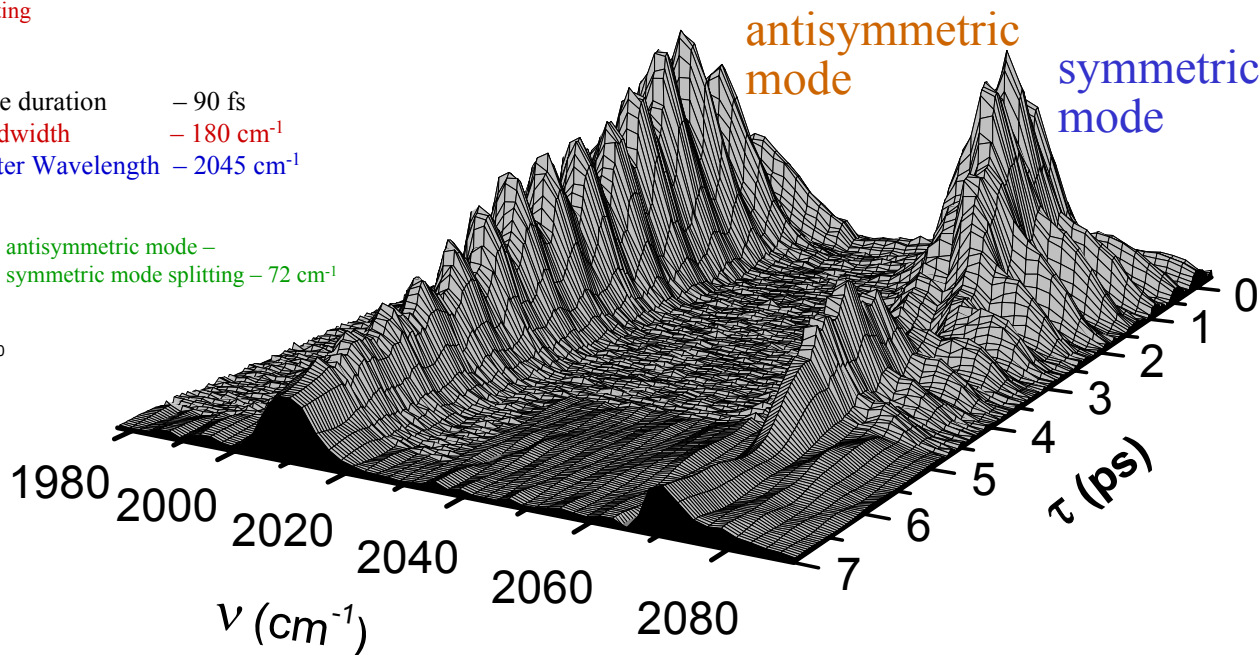
Wavelength dependence of quantum beats



Nature of Inhomogeneous Broadening



absorption spectrum



NSF Sponsored Activities Beyond Direct Research

Education – Training of Ph.D. Students and Post Doctoral Students

Recent students working in

Aerospace

Optical Communications

Biomedical

Working with Industry

Optical and electronic testing and aid in development
of infrared array detectors

Infrared Associates Inc.

Infrared Systems Development Inc.

Development and testing of ultrafast infrared
optical parametric amplifiers

Spectra Physics Corporation